

AIRPORT CHECK-IN COUNTER SIMULATION

Three types of customers arrive at the United Airlines check-in counter in Monterey Airport: check baggage (30%), purchase tickets (15%) and carry-on (55%). The interarrival-time distribution for all customers combined is EXPO(1.6 minutes). The bag checkers go directly to the check-bag counter to check their bags – the time for which is distributed TRIA (2,4,5) minutes – proceed to X-ray, and then go to the gate. The ticket buyers travel directly to the ticket counter to purchase their tickets, the time for which is distributed EXPO(7) – proceed to X-ray, and then go to the gate. The carry-ons travel directly to the X-ray, then to the gate counter to get a boarding pass – the time for which is distributed TRIA (1, 1.5, 3). All three counters are staffed all the time with one agent each. The X-ray time is EXPO(1). All travel times are EXPO(2) [from the counter to the X-ray station] except for the carry-on time to the X-ray, which is EXPO(3). Run the model for 960 minutes (16 hours). Measures of interest are resource utilization, waiting times and average queue sizes, and system time from entrance to gate for all customers combined.

Embellishment:

They plan to consolidate the ticket and check-bag counters into a single counter. Modify the model and compare the results with the base scenario.

Concepts:

- Decision: N-way by Chance (probabilistic branch)
- Queue consolidation (Single queue vs. multiple queues)